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BOTANY.<sup>1</sup>

**Notes on a Few Shrubs of Northern Nebraska.**—Of 50 shrubs that grow in the northern tier of counties west of Antelope County, some few have interested the writer and may prove of general interest. The observations extend over a period of six years. They are likely to be continued with equal profit in the years to come. The order followed is that of Professor Bessey's "Native Trees and Shrubs of Nebraska."

The only shrub representing the Coniferae is *Juniperus communis* L. I have seen it only in Hat Creek Basin, Sioux County. There it grows in prostrate ascending form, exactly like the juniper of Connecticut, in dry pastures. I have no specimen of the latter, but suppose it to be var. *alpina*.

*Corylus americana* Walt. is chiefly remarkable for its absence in this region. I have found it only in Cherry County, ten miles east of Valentine and 20 miles southwest on the Niobrara and its tributaries. It is flourishing and abundant where it occurs. Its lack of distribution may be partly accounted for by the late frosts of this high altitude (2600 ft.), which, as this year, destroy the flowers.

*Salix tristis* Ait. is very common over the sand-hill portion of Cherry County, also in Brown and Holt Counties. When it was sent to Mr. M. S. Bebb from Long Pine, Brown County, he stated that that was its western limit, so far as he knew. It is probable that Cherry County furnishes the limit sixty miles further west. Gray's Manual gives the height "1-1½ ft. high." It grows 5 feet high at Long Pine, in the brush.

*Salix cordata* is represented by var. *angustata* Anders., though the State claims var. *vestita* Anders. in the other portions. Mr. Bebb (Coulter's Man.) says: "It is altogether incredible, however, that any form of *S. cordata* ever attains tree-like size." I have a specimen at Ewing, Holt County, about twenty feet high and eight inches in diameter—a pretty sizable shrub! I shall measure it and take specimens this season. I will state, however, that it retains its shrubby character by branching ten or fifteen times just above this diameter, some of the branches being five or six inches through.

<sup>1</sup>Edited by Prof. C. E. Bessey, University of Nebraska, Lincoln, Nebraska,

*Rhus toxicodendron* L. As an instance of adaptability to environment, this species is noteworthy. It is very common on the sandy prairie of this region, perfectly upright, seldom over one foot high, with no tendency to creep, fruiting freely. Even in the brush you will seldom see it as a climber. It deserves more attention than most collectors would care to give it.

The wild crab is represented in these counties by *Pyrus ioensis* (Wood) Bailey. It has been commonly called, heretofore, *P. coronaria* L., but is much too white-wooly. It forms large patches covering several acres in extent, and, when not browsed by cattle, produces useful fruit. Its western range, so far, is northern Brown County.

*Crataegus coccinea* L. also represents the family with its beautiful scarlet clusters of edible fruit. While stray trees have been found in Cherry County, probably coming south from Rosebud Agency, where it is said to be common, I have not found it common west of Holt County.

*Amorpha microphylla* Pursh. is a new shrub in Nebraska. I found it last year (1893) on the gumbo hills of Holt and Boyd Counties, very common, but quite confined to that soil. It was reported also from another section of the State.

Up to the present time, no species of *Oenothera* has been reported as shrubby so far as my reading extends. I have seen indications in past years that caused me to suspect *Oenothera serrulata* Nutt of having the character, to some extent. This year, I have abundant confirmation. Here at Valentine, after a dry, hard winter that has killed whole timber claims of forest trees by freezing dry, a plant of this species has bloomed vigorously on shoots six inches long, starting from last year's stock five to six inches above the ground. The situation was fully exposed to all the rigors of the season. I have found several other plants sprouting vigorously two and three inches above ground. It shows about the same degree of hardiness as half the plants of *Amorpha canescens* Nutt., and quite as much as *Gutierrezia euthamiae* Torr. & Gray in this climate, both of which have long been classed as shrubs.

Valentine, Neb.

—J. M. BATES.

**Botany at Brooklyn.**—The recent scientific meetings in Brooklyn brought out a good number of botanists, whose papers and discussions touched upon nearly all parts of the subject of Botany, from Bacteriology to Paleobotany. That all were of a high order of merit could not be truthfully affirmed, but that all were creditable, and some of unusual interest is true. The botanists of the country have no rea-

son for feeling ashamed of their work as represented in these meetings.

In the Society for the Promotion of Agricultural Science nearly every paper dealt with some question more or less botanical. Here of course, the treatment was economic rather than strictly scientific, and yet in every case there was much of interest to the botanist. Thus there were papers on "The Vitality of the Seeds of Red Clover" (*Beal*); "The Russian Thistle in Nebraska" (*Bessey*); "A possible Relation between Blights and Exceptional Weather" (*Halsted*); "The Growth of Lettuce as affected by Physical Properties of the Soil" (*Galloway*); etc., etc.

The Botanical Club of the Association held several interesting sessions, and took active part in a delightful excursion by boat to Cold Spring Harbor on the north shore of Long Island. Among the notes presented before the club were the following: "The Prothallium of *Marsilia vestita*" (*Bessey*); "Notes on Oat-Smut" (*Jones*); "The use of Formalin as a Preservative Agent" (*Galloway*); "Sporangial trichomes on Ferns" (*Durand*); "The Significance of Stipules from the standpoint of Paleobotany" (*Hollick*); "A Plea for the better Pronunciation of Botanical Names" (*Bessey*); "A Species of *Olpidium* parasitic on *Spirogyra*" (*Durand*); "A method of making pure cultures of Fungi" (*Smith*); etc., etc.

A Committee on the pronunciation of Botanical Names was appointed consisting of Charles E. Bessey, N. L. Britton and E. L. Greene. The officers for the next year are Douglas H. Campbell, of Palo Alto, California, and Frederick C. Newcomb, of Ann Arbor, Michigan.

Twenty-six papers were read before Section G, beginning with the opening address by Vice-President Underwood, upon "The Evolution of the Hepaticæ." In this the speaker traced in a masterly way the evolution of the several groups of the liverworts, pointing out their mutual relationships, as well as their affinities with higher and lower plants.

The other papers were as follows:

B. T. Galloway, "The Growth of Radishes as affected by the Size and Weight of the Seed"; Katherine E. Golden, "The Movement of Gases in Rhizomes"; A. D. Hopkins, "Some Interesting Conditions in Wood resulting from the attacks of Insects and Woodpeckers"; W. J. Beal, "The Sugar Maples of Central Michigan"; John M. Coulter, "Some Affinities among Cactaceæ"; Charles E. Bessey, "Simplification and Degeneration"; Frederick C. Newcomb, "Regu-

latory Growth of Mechanical Tissue"; Charles E. Bessey, "Further Studies of the Relationship and Arrangement of the Flowering Plants"; Erwin F. Smith, "The Watermelon Disease of the South"; L. H. Bailey, "The Relation of Age of Type to Variability"; L. H. Bailey, "The Struggle for Existence under Cultivation"; "George F. Atkinson, "Relation between the Functions of the Vegetative and Reproductive Leaves of *Onoclea*"; H. H. Rusby, "*Lophopappus*, a new genus of Mutisiaceous Compositæ and *Fluckigeria*, a new genus of *Gesneriaceæ*"; George F. Atkinson, "On the Swarmspores of *Pythium* and *Ceratiomyxa*"; Elizabeth G. Britton, "A Revision of the genus *Scouleria*"; B. G. Wilder, "Evidence as to the former existence of large trees on Nantucket Island"; N. L. Britton, "Notes on Primary Foliage and the Leaf-scars in *Pinus rigida*"; Byron D. Halsted, "Notes upon *Chalara paradoxa*"; Elizabeth G. Britton, "A Hybrid among the Mosses"; Byron D. Halsted, "Notes upon a Root-rot of Beets"; N. L. Britton, "On *Torreya* as a Generic Name"; Elizabeth G. Britton, "Some Notes on the genus *Encalypta*"; Jed. Hotchkiss, "The Growth of Forest-trees illustrated from marked corners 107 years old"; Mrs. F. W. Patterson, "Species of *Taphrina* parasitic upon *Populus*"; Albert Mann, "Products of Metamorphosis and Monstrosities" (by title only).

Reports of progress were made by several of the Committees appointed last year, and they were continued for further work.

The Committee of the charter members of the Botanical Society of America held several meetings pursuant to a call of the Chairman, Dr. Trelease, and perfected the organization of the Society. Much time was spent in discussing the details of the organization, and in perfecting plans for work. The officers for the ensuing year are as follows: President, William Trelease, St. Louis; Vice-President, N. L. Britton, New York; Secretary, Charles R. Barnes, Madison, Wis.; Treasurer, John D. Smith, Baltimore.

Provision was made for a meeting sometime during the summer of 1895, the time and place to be announced later by the Executive Committee.

CHARLES E. BESSEY.